

TRAIL & *Landscape*

A PUBLICATION CONCERNED WITH
NATURAL HISTORY AND CONSERVATION



TRAIL & LANDSCAPE

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- Founded 1879 -

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Objectives of the Club: To promote the appreciation, preservation and conservation of Canada's natural heritage; to encourage investigation and publish the results of research in all fields of natural history and to diffuse information on these fields as widely as possible; to support and co-operate with organizations engaged in preserving, maintaining or restoring quality environments for living things.

Club Publications: *THE CANADIAN FIELD-NATURALIST*, devoted to publishing research in natural history. *TRAIL & LANDSCAPE*, a non-technical publication of general interest to local naturalists.

Field Trips, Lectures and other natural history activities are arranged for local members.
See inside back cover.

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SIX MORE YEARS ?

Readers of TRAIL & LANDSCAPE may be interested to know something about the origins of contents of our Club magazine. Analysis of Volume Six by page count (excluding Tables of Contents, Index, Coming Events) shows: 13% was provided by Editors, in the form of comment, photos and articles; 76% came from other Club members; 9% came from contributors who are not OFNC members; less than 2% was reprinted from other publications. Comparing the 1972 volume with those of previous years we find the proportion of material provided by Club members to be higher than ever before.

Because of the dual nature of our membership, it is interesting to look at authorship of contents in another way. Excluding Editors' contributions, material was provided about equally by professionals writing of their own special branch of knowledge, and by others who wrote on subjects which were not their professional concern. We are grateful to the busy professionals who take time to share their special knowledge of natural history with fellow Club members. We hope that amateurs also will continue to support Trail & Landscape with items written from their own valuable viewpoints. This balance of interest will keep our publication lively.

Members of the Club can be proud of keeping high the proportion of original material in our publication. However, our backlog is never large! If you have something to share with fellow members through any medium - an article, a letter, photos or drawings - please get in touch with an Editor, or send it along soon. Deadlines are generally five weeks before date of issue. We would like to remind potential contributors that material can relate to any aspect of natural history or conservation, but preferably should be pertinent to the Ottawa Valley, eastern Ontario or western Quebec.

F

O

N NEWSPAGE

Federation of Ontario Naturalists

KILLARNEY PROVINCIAL PARK

Late this summer the Ontario Ministry of Natural Resources held public hearings in Sudbury, Espanola and Killarney on the proposed options for Killarney Provincial Park. The F O N was represented at two of these meetings and presented a brief on the future of the park. The brief supported the government's policy decision to classify Killarney as a primitive park. It took exception to the proposed removal of a parcel of land in the David Lake area as it felt the main purpose in deleting this area was to permit the construction of a logging road to extract timber from the north of the park. This was a compromise of the primitive park policy decision.

STRAIGHT GOODS CONFERENCE

One of the F O N Field Representatives attended the Straight Goods Conference held in Kingston in September to bring the message of conservation and environmental planning to high school students from across the province. Considerable interest in the F O N has been expressed by the students as a result of these meetings.

NATURE AND PHOTOGRAPHERS

Last June nature photographers created a severe disturbance at the Luther Marsh Heronry which resulted in the loss of between 85 and 90 young birds. This thoughtless action has created an unfavourable image for the F O N, individual naturalists, and photographers in general. The Ministry of Natural Resources has now posted the heronry as out-of-bounds and is fully prepared to prosecute those who illegally enter. The F O N strongly supports this action.



Another World on the Ottawa

A. J. Erskine

"The Ottawa Valley" represents to most naturalists in this area only the flat to gently rolling limestone country between Hawkesbury and Pembroke, bordered to the north by the Laurentian and Gatineau hills and to the south wherever one chooses to draw a line east of the Algonquin dome and Madawaska uplands. But the Ottawa River has travelled many miles before it gets to Pembroke, through a country quite different from our familiar landscape of scattered woodlots and farmland with umbrella-like elms. The residents of Mattawa or Temiskaming, of New Liskeard or Rouyn, would hardly recognize that as a description of the Ottawa Valley they know. Let us take a quick look at the other world on the upper reaches of the Ottawa.

I saw it first in May 1964, from the viewpoint south of New Liskeard. Here, after miles winding through the contorted uplands of Timagami, one looks out on the "Little Clay Belt", a suddenly flat lowland stretching away to the north. Here one enters the bed of the former glacial lake Barlow/Ojibway, now a rolling area of sedimentary plains and abrupt rocky hillocks, from which the waters divide towards James Bay or the Ottawa drainage. The Arctic Watershed is prominently marked on the northern Trans-Canada route, but one crosses it many times on a tour of the Clay Belt. The Kinojevis, northernmost tributary of the Ottawa, picks up its first load of logs, bark and sawdust at McWatters, a few miles east of Rouyn, and the molybdenite mines north of Cadillac impound their effluents on the slopes above Lac Preissac, another 40 miles upstream. The Ottawa comes under man's influence almost from its source, and in this respect the upper Ottawa is like its lower reaches.

My next recollection was five years later, when I travelled there in search of possible study areas. In early October, the eastern hardwood forests are gloriously colourful, but as one journeys north the colours gradually dim. Beyond Maniwaki or North Bay the dark green of spruce and fir becomes dominant, and the warm glow of maples drops behind, leaving only the golden leaves of poplars and birches to brighten the boreal forest. For the upper Ottawa is a different biotic region, where black spruce and jack pine and aspen take over from maple and beech and white pine and hemlock; where moose replace deer, and where the (nodding) trilliums hang their heads below the leaves.

Why should this change be so abrupt here, when the hardwood forest extends south a thousand miles from the Ottawa? Climate is one major factor. In May 1970, Bob Watt and I travelled north to the Clay Belt to set up my study plots. The weather was mild and pleasant, with a southwesterly flow from the Mississippi Valley drifting over the region. The low pressure system passed away with the showers four days later, and we woke on the 20th shivering. Frozen water pipes in the cottage were suggestive, and the thermometer outside read 17°. We thought it only a freak of nature, but when we had two more mornings in the next ten below 20° we realized it was normal. The ice does not break up on James Bay, only 150 miles to the northwest, until early June. Until then, any wind from the northwest is coming almost straight off the ice-pack, and it feels like it. I woke to 23° on 12 June 1970 and 26° on 9 June 1971, but there is a summer afterwards. The cold spring clearly influences the vegetation, and other life as well. We were surprised at how slowly the warblers trickled in, few before 29 May, but Bob rejoiced in the delayed onset of mosquitoes and blackflies.

The cold springs probably helped destroy the early hopes for a new northern frontier, for the building of the northern C N rail line from Quebec City through Senneterre, Amos, La Sarre, Cochrane, Kapuskasing, and Hearst set off a wave of settlers to farm this new land. The fields are still there, and many of the farmhouses too, but there is little evidence of active farming. The southern approach to La Sarre is quite reminiscent of Grande Prairie in Alberta's Peace River district, but La Sarre at 49° N in the downwind area below James



Open sedge bog with scattered tamaracks near Perron
(off minor road between Senneterre and Val D'Or)

Abandoned farmland reverting to shrubbery
north of Duparquet (off Quebec Hwy. 63)



Bay's icefields has neither the growing season nor the day length which make farming possible at 55-56° N in Alberta. The northern towns in the Clay Belt still serve the farms nearby, but now the lumber mills are more prosperous, and the mining sites and hydro developments farther north are giving them new life. The more southern towns, Val D'Or, Malartic, Rouyn/Noranda, Kirkland Lake, and Timmins, were always mining communities, and many smaller mining sites now lie derelict through the country between.

And what is this country like, with its northern forests and barren farmlands and derelict mines? If you travel only the main roads, it will seem a well settled land, at least in Quebec. The farmlands have their Savannah Sparrows on the fence wires, and the young Starlings buzzing in the telephone poles. The towns are full of Tree Swallows and Yellow Warblers, besides the familiar introduced "feathered rats" (House Sparrow, Starling, Rock Dove). That much is familiar. But where are all the blackbirds? A few Grackles creak from the alder swamps, and a few Redwings from small marshes, and if you know where to look you can find a few Bobolinks in lush meadows, but the ubiquity of this group is missing. The elms and maples that line urban streets farther south are also absent, in their place only the shiny foliage of bay-leaved willow, which is planted in every town and village. Most roadside weeds are found coast to coast, except for a striking blue flower that one soon finds everywhere from field edge to forest shade - blue bell to the locals, and Mertensia paniculata to the botanists.

Away from the towns and main highways, the first impression is of butchered forests. Is it only by chance that "bucheron" is French for woodcutter? Mature stands are few, especially of upland spruce and fir, most of which have been reduced to scattered birch and poplar trees or snags amid slash soon grown up with hardwood shrubbery. A few fine poplar stands remain, their pale green trunks rising 70 or 80 feet from the roadside and their canopy shading out most of the willow and alder that pioneered the site. But wherever the ground is moist the latter persist, no longer as the weedy shrubs we think of but with Bebb willow up to 40 feet tall and speckled alders up to 25 feet and forming as tangled a jungle as anyone could wish to avoid.

The uncut areas are now mostly jack pine or low-land black spruce. The pine often seems to stretch for miles, but this is deceptive as the roads often follow the sandy ridges most favoured by this tree. Yet even on sandy sites alder occurs under the pines. Sweet fern, which I associate especially with the jack pine stands, was here too, but sometimes completely lacking. Other interesting plants of the jack pine lands were the glossy leaves of bearberry and the tiny yellow flowers of hudsonia, the only sign of life on an otherwise seemingly dead plant. And here too I found my only stations of the stemless lady's slipper in the area.

But it is the endless miles of swampy black spruce forest that are the essence of this northern land. In the hollows they grade off into muskeg or sedge bog, along the brooks into alders (of course), and where slightly drier and more fertile into fir. But the typical spruce forest contains few surprises, either in plants or birds. Connecticut Warblers were one excitement, but not one to find on a fleeting visit; they don't mind being heard, but to see one perched is a challenge that may take half an hour after you've located the tree whence the bird sings. A pair of Northern Three-toed Woodpeckers had their nest on one of my study plots, most obliging of them as I didn't see another one all season. And an out-of-range Fox Sparrow sang in the same area in two succeeding years, along an alder-hung brook amid the black spruces.

At the end of all this, many people will wonder whether all this is worth the trip. After all, one can see all the birds in migration through Ottawa, and black spruce bogs are as near to hand as the Mer Bleue. But before you reject the idea of a trip to the Clay Belt, think of Canada as a country, rather than as a narrow fringe of settlement along the northern edge of the United States. The hardwood forest is only a spillover from farther south; the boreal forest is the Canadian Zone. It was the boreal forest that attracted the fur traders to Canada. The boreal and related forests occupy one-half of Canada's area, as much as all other biomes put together. This is the most characteristic part of Canada, and it is only 350 miles from Ottawa - closer than Point Pelee. Don't forget it - that other world in the Ottawa Valley.

Open jack pine stand
on sandy ridge near
Belcourt (west of
Senneterre, off
Quebec Hwy 45)

photos: A. J. Erskine



Overmature black spruce
forest near Ghost River
(south of Abitibi Lake,
off Ontario Hwy 101)





White Owl Conservation Awards
Les Prix de conservation White Owl

OTTAWA GROUP RECEIVES \$2,000 CONSERVATION GRANT

Montreal, October 23, 1972: A citizens' action group organized to preserve the wilderness state of the Gatineau Park near Ottawa has been awarded a \$2,000 conservation grant by the White Owl Conservation Awards Committee. Formed in 1968 as the Ottawa-Hull chapter of the National and Provincial Parks Association of Canada, the group prepared, published and distributed 2,000 copies of a brief entitled, "Gatineau Park, a proposal for its conservation and use". Through its distribution to federal and provincial M.P's, the National Capital Commission (which administers the park) and the Ottawa news media, the organization aroused interest and public support for its cause.

Gatineau Park is a tract of land approximately 80,000 acres in size located just outside the Ottawa-Hull metropolitan area. It falls under the jurisdiction of the National Capital Commission. The park is unusual for its semi-wilderness state with its clear lakes and streams, unspoiled forests and miles of woodland trails. It is within 20 minutes drive of the Parliament buildings. The National Capital Commission is studying prospective uses for the park and the choice appears to fall between developing it as recreation land or preserving it to the largest extent possible as a wilderness area. The brief prepared by the Ottawa-Hull chapter of the National and Provincial Parks Association presents a very effective case for the latter choice.

The White Owl Conservation Awards program distributes a number of grants throughout each year to individuals and organizations working to preserve the Canadian environment. This year grants have been awarded to publish a book on noise pollution in British Columbia, to complete an environmental survey of the Canadian shore of Lake Superior and to set up a citizens' law advisory office in Sudbury, Ontario. A committee of 11 people from across Canada decides the recipients of the grants from applications received from the general public.

HON. LEO BERNIER PROPOSES CROWN LAND CAMPING POLICY

In a statement made to the annual meeting of the Northwestern Ontario Associated Chambers of Commerce, on September 21, 1972, the minister of natural resources, Leo Bernier, concurred that camping on Crown land outside provincial parks has a strong appeal. "It provides freedom, a wide variety of recreational opportunities, seclusion, access to better fishing and hunting and so on. At present, there is no charge and only one restriction - a time limit of three weeks occupancy of a particular site", he said. The Minister added that in its present unregulated state camping on Crown lands creates serious problems. He said that "campers leave garbage mess. They conflict with other users such as commercial outfitters and logging operators, and they congregate at access points barring access by day-users to lakes and rivers, polluting water and creating unsanitary conditions. ...Clearly, something must be done. It does not seem proper that the general public should continue to bear the full cost of cleaning up after the campers".

To meet these problems and to assure the continuation of Crown land camping in Ontario, the ministry of natural resources proposes the following policy: That open, closed and regulated zones be established for camping on Crown lands and an annual fee of \$5.00 a camping unit for Canadian residents and \$25.00 a camping unit for non-residents be levied. In an Open Zone a camper may camp anywhere on Crown land. Closed Zone: no camping allowed because of conflict with other uses. Restricted Zone: camping restricted to designated sites at which only certain basic facilities will be provided such as toilets, garbage cans and drinking water. Camping Unit: house trailer, truck-mounted shelter, etc. Permits would be available from local offices of various ministries and from authorized issuers outside government. Campers would also be able to obtain permits by mail.

NEWSLETTER, Ontario Ministry of Natural Resources

Comments on this proposal would be welcomed. Write to L. H. Eckel, Executive Director, Division of Lands, Room 1410, Ministry of Natural Resources, Parliament Buildings, Toronto, Ontario.

BEGINNER'S LIBRARY

Joyce M. Reddoch

After someone has identified a few flowers or birds for you, or perhaps before, you may get the urge to learn more about some features of the natural world around you. So what books will help you? You need sources which are easy to use but which are complete enough to cover all species likely to be found in the Ottawa area. More specifically, you want to get a feeling for what is common in the region and what isn't, as well as where to find the various subjects of interest.

The most useful and complete introductory books are those in The Peterson Field Guide Series (P). They are available at any good bookstore such as that of The Canadian Nature Federation, 46 Elgin Street. Our club presents numerous articles of particular interest to Ottawa residents through Trail & Landscape, The Canadian Field-Naturalist, and special publications. Back issues are usually available (OFNC). T&L, Volume 5, Number 2 has a review of articles from 1967-1970. The Queen's Printer (Q) and the Information Services Branch of the Ontario Ministry of Natural Resources (O) also publish good material.

Birds

A FIELD GUIDE TO THE BIRDS - R.T. Peterson - gives field marks for all the birds of eastern North America. (P)

HOW TO KNOW THE BIRDS - R.T. Peterson - is useful for learning what birds are to be expected in different types of country.

CHECKLIST OF THE BIRDS OF THE OTTAWA-HULL AREA tells you what birds are found in the region at different seasons of the year. (OFNC)

Mammals, Reptiles, Amphibians and Fishes

A FIELD GUIDE TO THE MAMMALS - W.H. Burt and R.P. Grossenheider (P)

A FIELD GUIDE TO ANIMAL TRACKS - O.J. Murie (P)

A FIELD GUIDE TO REPTILES AND AMPHIBIANS - R. Conant (P)

ONTARIO TURTLES and ONTARIO SNAKES - both by B. Froom - are two excellent and delightful booklets. (O)

Salamanders, toads, treefrogs, frogs, turtles, lizards, and snakes recorded in this district have been discussed by F.R. Cook in a series printed in Volume 2 of T&L. Subsequent issues have contained articles on fishes by D.E. McAllister, crayfishes by E.L. Bousfield, and crustaceans by E.L. Bousfield.

Insects

A FIELD GUIDE TO THE INSECTS - D.J. Borror and R.E. White - is best for this rather complicated subject. (P)

A FIELD GUIDE TO THE BUTTERFLIES - A.B. Klots (P) - is complemented by articles in T&L on the local species by J.D. Lafontaine.

Plants

A FIELD GUIDE TO WILDFLOWERS - R.T. Peterson and M. McKenny - is good because it groups 1300 species of eastern North American flowers by color. (P)

NATIVE TREES OF CANADA (7th edition) - R.C. Hosie - has excellent keys and descriptions of all the trees and many of the common shrubs. (Q)

A FIELD GUIDE TO THE FERNS AND THEIR RELATED FAMILIES - B. Cobb - is valuable for identifying not only the ferns but the clubmosses and horsetails as well. (P)

FERNS OF THE OTTAWA DISTRICT - W.J. Cody - is a comprehensive study of our local ferns. (Q)

Geology

GUIDE TO THE GEOLOGY AND SCENERY OF THE NATIONAL CAPITAL AREA - D.M. Baird (Q)

A GUIDE TO THE GEOLOGY OF THE OTTAWA DISTRICT - A.E. Wilson, CFN, Vol. 70, No. 1, 1956. (OFNC)

A GUIDE TO THE GEOLOGY OF THE GATINEAU-LIEVRE DISTRICT - D.D. Hogarth, CFN, Vol. 76, No. 1, 1962. (OFNC)



The Tree Sparrow

Brenda Carter

The tree sparrow is so well camouflaged that even upon hearing the mouse-like rustle of its feeding in the tall grass and weeds, it often remains undetected. A further confusion in identity is caused by the fact that a solitary bird is often curious, and it comes to investigate giving a short note from an exposed perch; but if it is part of the rather large loose flocks in which it migrates, it utters a much more musical two-note call, and the flock as a whole is difficult to approach. Often overlooked by the casual observer is the beautiful tapestry pattern of its back and wing feathers, composed of subtle earth colours and white. Some of these attractive northern breeding birds fortunately spend their winters here.

Editor's note: With great pleasure we present this drawing as the first of what is hoped will be a series depicting birds and mammals common in the Ottawa area. It was drawn especially for Trail & Landscape by a fine nature artist, Brenda Carter of Merrickville. Since her work first appeared in T&L in 1967 (as Brenda Haas) she has done many paintings locally, and has made four trips to the Arctic to study and paint northern wildlife. It is our good fortune to have her work again in our pages.

THE SIGNIFICANCE OF



FOUND BURIED NEAR MASSON, P.Q.

J. M. Robinson

One day in May 1967 Mr. M.J. McNamara of the Federal Forestry Service asked if any of the foresters were interested in some logs buried under 4 to 6 feet of clay on his brother Walter's farm, Lot 8, Concession 2, Township of Buckingham, or about two miles east of Masson, P.Q. along provincial highway 8.

In June, Dr. Jan Terasmae, now of Brock University, Mr. McNamara and I went to investigate. From Mr. McNamara's description it had seemed that the logs might be under the familiar bluish Champlain Sea clays. If so they could be very old and would show what trees had preceded the Champlain Sea era. Possibly the logs were from species which later developed into our familiar pines, spruces and hardwoods.

On arriving at the farm it was found that the Quebec government had straightened a meandering watercourse by digging a deep ditch across the McNamara farm. An unusually big flood the following spring had deepened the ditch, uncovering the logs. These logs, however, were above, not below the Champlain Sea clays and had been buried by the overflow deposits of the then enormous Ottawa River. Dr. Terasmae had had logs from similar depths of clay in other parts of the Ottawa region carbon-14 tested, and told us that those at a depth of about four feet would be at least 2000 years old, and those at a depth of six feet could be as old as 5000 years. Unfortunately Dr. Terasmae left the Geological Survey of Canada to join the staff of Brock University. I was busy on other projects, and no further work was done on this study until 1970.



In July 1970 Dr. Marion Parker, a dendrochronologist with the Geological Survey, Mrs. Jane Buckley, a geographer and Pleistocene geologist with the Forestry Service, Mr. Russell Robinson, Mr. McNamara and I collected more specimens, some of which Dr. Parker took to Vancouver for special dendrochronological tests. Nine pieces of wood were taken to Mr. E. Perem of the Forest Products Laboratory, Ottawa, for species identification.

Again there were high hopes. We might find new tree species, or possibly trees indicating Arctic conditions. Surely there would be some change in 2000 years. To our disappointment, the specimens were maple (Acer saccharum or nigrum), soft maple (Acer sp.), eastern hemlock (Tsuga canadensis), birch (Betula sp.), butternut (Juglans cinerea) and white pine (Pinus strobus). Exactly what is growing there today despite river floods, fire, logging and clearing for agriculture. Two thousand years and not only had the tree species not changed but the forest composition was much the same.

Back in the 1950's Dr. Hugh Raup, then Director of the Harvard Forest on the Hudson River, U.S.A., lectured on ecology and plant succession at the Victoria Museum, Ottawa. One of his statements had been that the forests of Canada and the New England states had not changed greatly during the last few thousand years because periodically disasters returned them to earlier stages of forest succession. He explained that few areas in Canada had been free of fire for longer than 200 years. New England had fewer fires but the hurricane damage was greater.

There is insufficient space in this article to mention more than the oldest of the many examples on which his theory was based. This was from the logbook of Henry Hudson where he described a portion of the Harvard Forest as it was in September 1609. It had not changed in 350 years. But here at Masson was confirmation of his theory from specimens at least 2000 years old.

Just as nature has used the disasters of famine, disease and war to keep human populations relatively low, she was apparently also maintaining the forest "status quo" by the "disaster approach".



NATURE PHOTOGRAPHY WORKSHOP

SNOWFLAKE PHOTOGRAPHY by George Christie

The snowflake has been seen as a masterpiece of beauty, fragility and perfection of form since it was first described by Aristotle. Early mediaeval attempts to represent its beauty were not too successful probably due to the lack of optical aids. After good magnifiers became common, accurate line drawings of snowflakes became possible. Large scale representation was not attempted until the photographic microscope could be used.

The acknowledged master of snowflake photography was Wilson Bentley, a self-taught farmer from Jerico, Vermont. Beginning in 1880 and continuing over a period of 45 years Bentley photographed snowflakes at every available opportunity. Using a compound microscope, daylight illumination and slow photographic plates, he produced over 5000 negatives that still remain a monument to his patient dedication. In recognition of his contribution to science the American Meteorological Society had about 2000 of his photographs published in book form*.

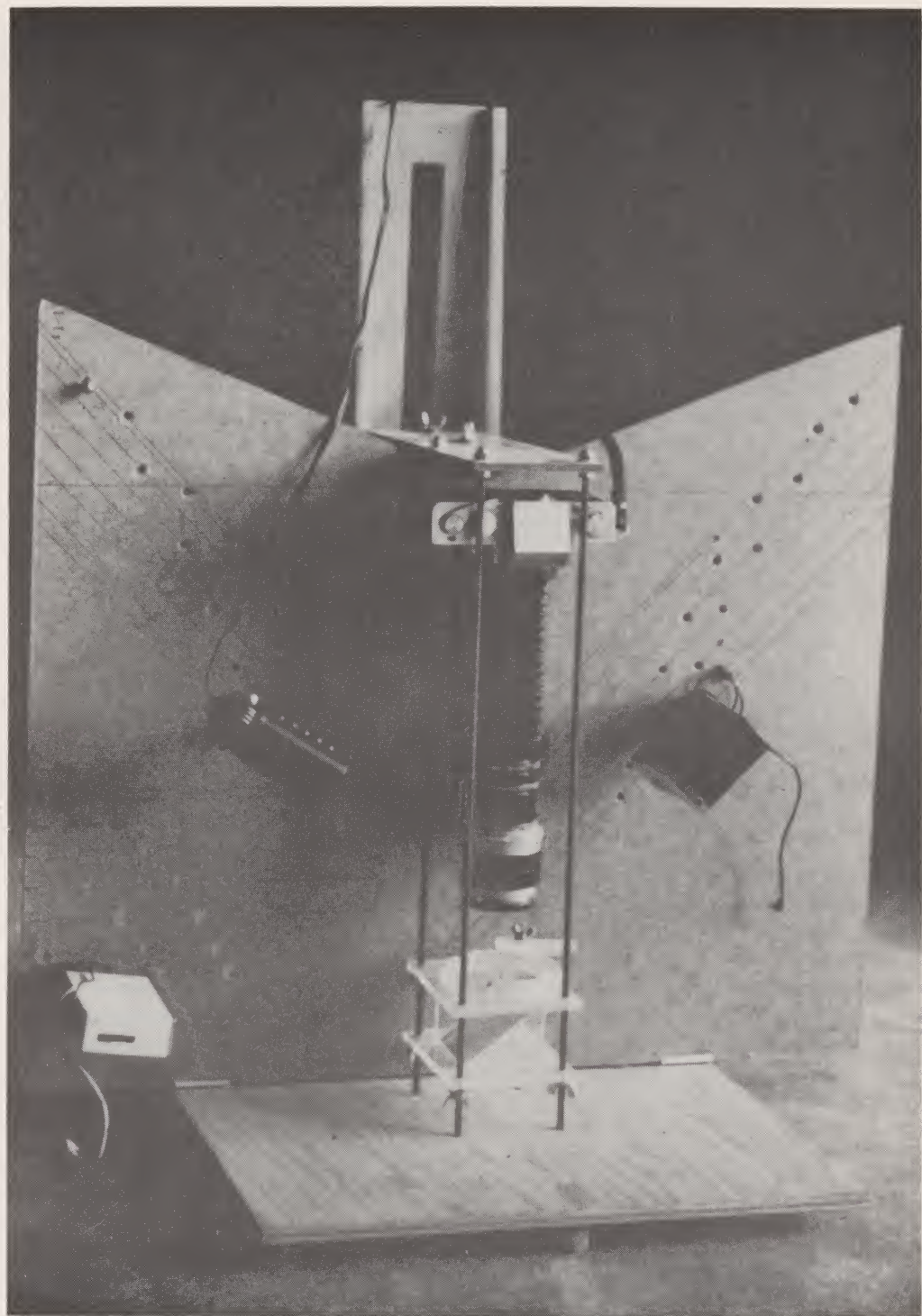
The single lens reflex camera and attachments now available make the techniques of snowflake photography much simpler than those used by Bentley. It still requires patience and perseverance to get good results. It is also necessary to provide a stand for the camera with its attachments and lighting equipment, and it must all be set up outside where you can collect your snowflakes and photograph them at low temperatures.

*Bentley, W.A. and W.J. Humphreys. SNOW CRYSTALS
McGraw-Hill Book Co., N.Y. 1931
Reprinted 1962 by Dover Publications Inc., N.Y.

A snowflake of $1/8''$ diameter at a magnification of four times will give an image that is $\frac{1}{2}''$ diameter. This will give good projection from a 35mm slide and flakes both larger and smaller than $1/8''$ can still be used. Four times magnification on the film is a reasonable one to aim at.

The optical requirement to get 4X magnification on the film is to bring the lens forward from its position where it is focused on infinity a distance of 4 times the focal length of the lens. For example, if you use the 50mm lens that is common on 35mm cameras, the lens must be brought forward $4 \times 50 = 200\text{mm}$ or 8 inches. With many cameras, this lens extension may be obtained with a bellows and possibly a set of extension tubes. These attachments are available for a number of cameras. As it is impractical to use a hand-held camera at a magnification of 4X, a stand is essential. The stand may be either purchased or made from plywood as mine is. The essential thing is to support the camera without vibration. When you consider photography at a magnification of 4X, the field photographed measures $\frac{1}{4}'' \times 3/8''$ ($6.25\text{mm} \times 9.38\text{mm}$). Finding the subject in the viewfinder is not always easy. In addition the depth of field is very shallow so it is possible to look directly at the subject and not be able to see it because it is out of focus. This means that you need a flat stage below the camera lens for easy manipulation of the subject and a means of moving the stage for focusing. It makes little difference whether you move the camera or move the stage for focusing; either method will work. I chose to move the stage. Figure 1 is a general view of the stand as it developed. A waist-level viewfinder makes it much easier to operate the camera at a comfortable height and is almost essential for snowflake photography. The backboard as seen in Fig. 1 was added to the stand for close-up work. It is a convenient place to fasten lights when you feel the need of a few extra hands.

Good backgrounds for snowflakes are difficult to find; most of them are distracting at the magnification used. After some experimentation I decided that Bentley's method of using clean glass is as good as any. Microscope slides are convenient and free from texture. The glass slide may be held out to catch a falling snowflake, then placed on the stage below the camera lens.



Or the snowflake may be caught on a piece of card and the card gently tapped to drop the snowflake onto the glass. The main disadvantage of glass is that unless you take care to prevent it, all of the photographs will have the same background. This eventually becomes monotonous. One answer is to control the lighting of the subject and background so they can be altered independently. This may be done by centering the camera over a hole in the stage where the snowflake on the glass slide is placed. It may then be illuminated from the under side with coloured light. My method of doing this is to place a flat white reflector under the stage and to illuminate the reflector. A coloured filter in this lighting system will add colour to the background. The arrangement can be seen in Fig. 1.

For a number of reasons f22 is a convenient aperture to use. I have used colour slide film of ASA 64. Electronic flash (Guide Number 50) is used both for illumination of the background and for illumination of the subject. Both of the flashes are charged from the 110V power supply. The one used to illuminate the subject will re-cycle on mains power in about three seconds. Many of the exposure details must be based on experience. A flash calculation using f22 as the lens aperture and correcting for a magnification of 4X will give a fair idea of where to place the flash that is used to light the background. A darker coloured filter will give a darker background, but the same effect may be obtained by moving the light farther from the sub-stage reflector. Experience is needed to get good results from the filters available. The position of the light may be marked on the backboard.

Illumination of the snowflake is also based largely on experience. I use the flash four to six inches from the snowflake - the exact distance is not too critical - and aimed at the flake at an angle. In this way the upper flash does not interfere seriously with the lower one used to illuminate the background, and the glare from the glass slide holding the snowflake does not enter the camera lens.

After examining your first results you may decide as I did, that your snowflakes have an odd appearance with a bright line through the centre and only two

points lighted. This is more noticeable on clear, well-formed flakes than it is on flakes covered with hoarfrost. The explanation is that the snowflake is a hexagonal crystal and has three crystallographic directions through it. If you want your snowflake to appear uniformly lighted you will have to illuminate each crystallographic direction separately. This is not as difficult as it sounds. I use open flash technique. The procedure is to focus the subject, stop the lens down to f22, set the shutter to "time" and fire the flash by hand. The flash will re-cycle in the time needed to move it around 60° and place it by eye at the required distance, where it is again fired by hand. This is repeated for the third crystal direction, the flash fired to light the background and the shutter closed. A ring light would probably do the same thing in one shot.

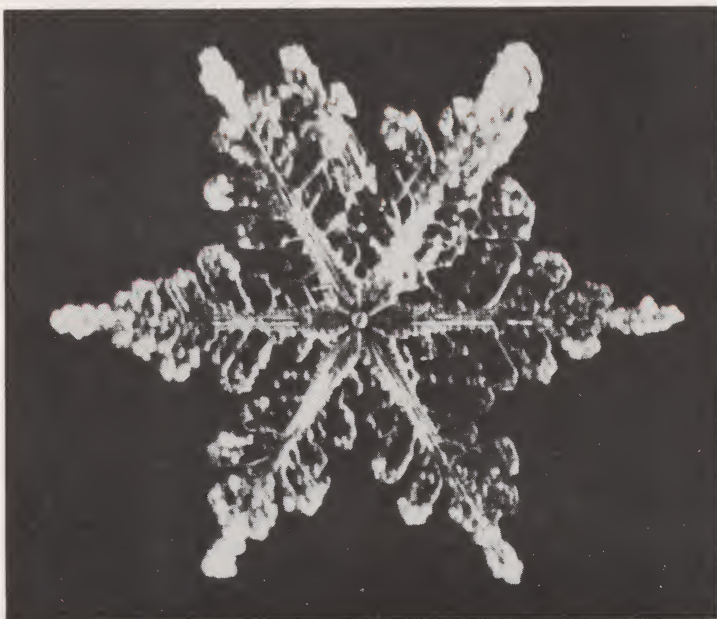
To make this technique practical you will need a frame covered with cardboard and large enough to cover the camera and stand completely. The front of this cover should be made into a flap that can be raised for operation of the camera and for focusing. The magnification should be set on the camera and all equipment made ready before it is moved outside. The equipment, under its protecting cover, should be left outside for an hour or so before use so that it will be cooled down to the outdoor temperature. In use the cover also reduces extraneous light so the open flash technique may be used without difficulty.

The remaining piece of equipment needed is a small spot light of the type used for low power microscope work. This is used to light the subject while you are focusing. Without it the subject cannot be seen in the viewfinder even with the lens wide open. It also makes it possible to operate at night.

When you have finished shooting, the equipment should be placed in a plastic bag before you bring it inside, and left in the bag until it has reached room temperature. This prevents condensation of moisture.

For anyone who is seriously interested in snowflakes, an excellent textbook has been published: Nakaya, Ukichiro. SNOW CRYSTALS, NATURAL AND ARTIFICIAL Harvard University Press. 1954

photos: George Christie
prints: Elizabeth Amey



A NEW SYMBOL

FOR

AN OLD PARK



John G. Woods
Park Naturalist
St. Lawrence Islands National Park

The rugged silhouette of a lone Pitch Pine growing on a tiny island has been chosen as the interpretive motif for St. Lawrence Islands National Park. Under the recently introduced "Souvenir Passport" programme, a representative and distinctive symbol has been assigned to each of Canada's National Parks. Visitors wishing to record their exploration of this Park system may obtain a Passport in any National Park and have it stamped with the individual motif of each Park they visit. The symbol will also become a familiar sight on Park posters and pamphlets.

St. Lawrence Islands was established in 1904 and is the oldest National Park in Eastern Canada. Set in the famous Thousand Islands area of the St. Lawrence River, the Park consists of some 18 islands and 80 or more rocky islets scattered between Brockville and Kingston. A small campground and picnic area at Mallorytown Landing serves as a mainland base for Park operations.

The new Pitch Pine motif is a fitting symbol for this island Park. St. Lawrence Islands is the only Canadian National Park with Pitch Pine growing within its boundaries. This tree is more at home on the

coastal plain of New England and along the Appalachian Plateau and its occurrence in Canada is an oddity of plant distribution. In this country, Pitch Pine is confined to small areas within the Upper St. Lawrence River Valley. The rugged, weathered character of this tree is an appropriate reminder of the rocky Thousand Islands area in which the Park is situated.

Pitch Pine is easy to identify. It is the only Pine in Eastern Canada with needles in clusters of three. White Pine has five needles per group, while Red, Scotch and Jack pine have only two. Although Pitch Pine may grow to a height of 60 feet in the United States, here, on the edge of its range, it is usually a fairly small tree. Because of its small size and rarity it is not important to the Canadian forestry industry.

Mr. A. E. Garwood of Queen's University has been studying the flora of the park for the last three years and has recorded Pitch Pine on eight of the park's islands. It is abundant on Stevin Island near Brockville, Georgina Island just east of Ivy Lea and Thwartway Island across from Gananoque. The easiest way to see the tree is to visit the mainland camping area at Mallorytown Landing. Here Pitch Pine and many other trees of the Oak-Hickory forest are common and you can count the number of needles per cluster for yourself.

** ** ** ** **

Editor's note: A visit to this delightful Park, only 80 miles from Ottawa, is something to keep in mind for next summer. Meanwhile you can learn more about it - a detailed brochure on the park's human and natural history, along with a park map, is available by writing the Superintendent, St. Lawrence Islands National Park, Box 469, R R #3, Mallorytown, Ontario.

B R C ACTIVITIES AND RECENT RARE BIRD RECORDS

D. F. Brunton and R. A. Foxall

How has the Bird Records Committee of the OFNC responded to its first year of operation? Quite well indeed. The three main bird counts (Christmas Census, Spring Round-up and Fall Round-up) were again held last year. All were very successful. A brief report of these may be found in the January-March 1973 issue of The Canadian Field-Naturalist. By the end of October 1972, five meetings of the BRC had been convened, and among other items, 17 rare bird reports were examined. The following were accepted:

1 HARLEQUIN DUCK Histrionicus histrionicus

First Ottawa District Record

An immature male was seen on November 20, 1971 on the Ottawa River just off Brébeuf Park, Hull, Quebec. It was first observed by Richard Poulin, Dan Brunton and Paul D. Pratt, and subsequently was seen by a large number of observers. Though found usually on the Quebec side of the river, it was seen in Ontario on several occasions in December. The bird was present at least to the end of January (Jan. 29, 1972 - Roger Foxall). In addition, it was the first record of the species for the Christmas Census.

2 WHIMBREL Numenius phaeopus Casual migrant

One bird was seen at the Thurso Quebec sewage lagoon on June 3, 1972 by Roger Foxall.

3 BLACK-LEGGED KITTIWAKE Rissa tridactyla

First Ottawa District Record

One immature was observed October 2, 1971 off Haycock Island, Shirley's Bay, Ottawa by Monty Brigham.

4 CAROLINA WREN Thryothorus ludovicianus

Very rare visitor

One male was observed Dec. 18, 1971 at 525 Mayfair Ave., Ottawa by Dr. & Mrs. N.C. Baird. The bird was present at the feeder until at least March (March 5, 1972 - Bruce Mactavish et al.). This was the first wintering record of the species for the city of Ottawa, and with another in Wychwood, Aylmer, Quebec, the first Christmas Census record for the District.

- 5 VARIED THRUSH Ixoreus naevius First record for eastern Ontario (just outside of District)
One female was seen January 25, 1972 on River Road, Braeside, Renfrew Co., Ontario by Michael Runtz. Subsequently it was seen by a large number of Ottawa observers (Report: January 26, 1972, Roger Foxall & John Woolley). The bird was observed at the McTeer feeder from approximately January 1 until at least late April 1972. A photo of the bird was positively identified by Dr. W.E. Godfrey of the National Museum of Canada.
- 6 WHITE-EYED VIREO Vireo griseus Casual migrant.
Fourth Ottawa District record and first report for the province of Quebec.
One immature was observed at Deschenes, Quebec on October 31, 1971 by Dan Brunton and Jim McCuaig. It was seen again November 1, 1971 by Ron Pittaway, Roger Foxall and Monty Brigham.
- 7 PROTHONOTARY WARBLER Prothonotaria citrea
First Ottawa District record
One adult bird was observed October 1, 1971 on Royal Ave., Ottawa by Hue and Elva MacKenzie.
- 8 PRAIRIE WARBLER Dendroica discolor Casual migrant
Second Ottawa District record.
One male was observed at "The Cedars", Aylmer, Quebec, on May 6, 1972 by Monty Brigham, Roger Foxall, John Woolley and Bruce Mactavish.
- 9 PRAIRIE WARBLER Dendroica discolor
Third Ottawa District record
One adult was observed August 15, 1972 at Merivale Gardens, Ottawa, by Bruce Mactavish.
- 10 BOBOLINK Dolichonyx oryzivorus
First winter record for Ottawa District
One adult was observed December 5, 1971 one mile west of Dunrobin, Ontario by Bruce Mactavish, Steven O'Donnell, Michael McKie and Robin Humphries.
- 11 YELLOW-HEADED BLACKBIRD Xanthocephalus xanthocephalus
First Ottawa District record
One adult male was observed September 1, 1971 at Fallowfield, Ontario by Steven O'Donnell.

12 LECONTE'S SPARROW Passerherbulus caudacutus

First Ottawa District record

One adult was observed at the end of the Ridge Road, Mer Bleue, Ottawa on September 5, 1971 by Bruce Mactavish, Harry Williamson and Michael McKie.

The five remaining reports were not considered to be conclusive. They included: European Widgeon (September 3, 1972), Franklin's Gull (November 28, 1971), Sabine's Gull (September 25, 1971), Prairie Warbler (September 4, 1971) and LeConte's Sparrow (Sept. 3, 1972).

There are several reports still to be studied in future meetings and of course, rare birds keep turning up! Rare Bird Report forms are in the hands of all members of the BRC and provide an easy format for the presentation of a thorough report. The clarity of presentation is important.

These are the members of the BRC for 1973:

Chairman: Roger Foxall 745-7791

Secretary: Dan Brunton 236-5845

Monty Brigham	728-0855	Bruce Mactavish	825-1502
Tony Erskine	225-2341	Ron Pittaway	
George Holland	822-6623	Richard Poulin	729-1519
Hue MacKenzie	722-8847	John Woolley	836-5738

USE THEM! All will be pleased to help with any questions or problems you may have about birding. All suggestions will be forwarded to the BRC for consideration.

The standardization of bird record reviewing has much simplified the business of legitimizing such records. Already this has proven extremely helpful to the local compiler of bird records for American Birds (formerly Audubon Field Notes). Its usefulness can only increase with time.

The initial successes of the BRC are gratifying. We of course are optimistic for greater success in the future. By telling us about your observations, you can be instrumental in those successes.

Good Birding!

O F N C EVENTS IN JANUARY AND FEBRUARY
arranged by the Excursions and Lectures Committee
Ewen C. D. Todd, Chairman (225-4316)

Tuesday
9 January

LECTURE: MOSSES AND LICHENS AS SENSITIVE
INDICATORS OF AIR POLLUTION
Speaker: Dr. Fabius Leblanc
Meet: St. Andrew's Church
Kent & Wellington - Kent St. door
Time: 8 p.m.

Prof. Leblanc will discuss his work with these indicators of air pollution in Wawa, Sudbury and Arvida, and how to map the long range effects of air pollution on these plants.

Saturday
13 January

FIELD TRIP: CROSS COUNTRY OUTING ON SNOWSHOES
Leaders: Harry and Sheila Thomson (234-0845)
Meet: Supreme Court Bldg. Wellington St.
Time: 9 a.m.

Bring snowshoes, warm clothing, lunch. (A cross country ski trip similar to this will be held in March).

Friday
19 January

DISCUSSION: BIRD ROUND-UP #5
Leader: Roger Foxall (745-7791)
Meet: St. Andrew's Church, as above
Time: 8 p.m.

What's new in the bird world? Come and join the discussion. Bring along any slides that might be of interest.

Wednesday
7 February

LECTURE: THE ECOLOGY OF BATS
Speaker: Dr. Brock Fenton
Meet: St. Andrew's Church, as above
Time: 8 p.m.

An illustrated presentation on bats and their environment

Sunday
11 February

FIELD TRIP: WINTER BIRDS
Leader: Bill Holland (234-6705)
Meet: Billings Bridge shopping centre
Time: 8 a.m. Half day trip - bring snack

Friday
16 February

FILM: GROUSE COUNTRY
Commentator: Dr. S. D. MacDonald
Meet: St. Andrew's Church, as above
Time: 7:30 p.m.

Dr. MacDonald's nationally acclaimed film presents an in-depth study of the grouse family in Canada (2 hrs.). Dr. MacDonald will answer questions following the film.

T R A I L & L A N D S C A P E

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